

U.S. Patent Application Serial No. 10/031,031
Reply to Office Action dated March 15, 2005

Remarks:

Applicants have read and considered the Office Action of March 15, 2005 and the references cited therein. Reconsideration of this Application and entry of the foregoing amendments are requested. Claim 2 has been cancelled and claims 1, 14 and 16 have been amended.

Applicants believed that the claims amended during the international phase and submitted in a preliminary amendment were not examined. Applicants' Representative spoke with the Examiner regarding the claims examined and the preliminary amendment. The Examiner indicated that a new action would not be issued and Applicants have responded based on the claims that were filed and examined. Applicants' Representative thanks the Examiner for the courtesy and cooperation extended.

CLAIMS OBJECTIONS

Claims 1, 3, 5-11, 14 and 15 are objected to because of errors in the step numbering. Applicants amend claim 1 to renumber the steps of the method. Applicants assert that the objections are traversed.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 1-4 and 13 were rejected as being anticipated by EP 0182469 under 35 U.S.C. § 102(b).

Applicants respectfully traverse the rejection as follows.

Claim 1 has been amended to more precisely describe the invention in relation to the description as filed (see in particular page 18 at lines 11-20). Applicants cancel claim 2 without prejudice.

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Contrary to known methods, such as the ones disclosed in EP 0182469, the method according to the present invention requires only three images. Additional images, when available, may allow for discarding noisy pixels or images and selecting only three images having the most advantageous intensity values, i.e. intensity values that are less noisy (since noise can be caused, for example, by an image saturation, or by an image being black). For example, in the case when four images are available, the step h) of the present method as recited in claim 1, provides that the three "best" images among these four are selected by discarding the one that is the "most noisy".

The present method teaches the use of only three most advantageous intensity values, selected among intensity values that may include intensity values that are noisy, for example due to image saturation. In sharp contrast, in the method described by EP 0182469, none of the stored intensity values are discarded since they are all used in a least squares method so as to increase the precision of the phase computation by using all values in higher order computation.

From the foregoing, Applicants assert that it is clear that EP 0182469 does not disclose the method as recited in the new Claim 1. Therefore, it is submitted that claim 1 patentably distinguishes over EP 0182469. Since Claims 3, 4 and 13 depend upon claim 1, it is submitted that Claims 3, 4 and 13 are also patentable over EP 0182469 for at least these reasons.

In view of the above and foregoing, it is respectfully requested that the rejection of claims 1, 3, 4 and 13 under 35 U.S.C. 102 be withdrawn.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 9-12 and 14 have been rejected as being unpatentable over EP 0182469 in view of WO 98 55826 under 35 U.S.C. § 103.

Applicants respectfully traverse the rejection as follows.

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Contrary to known methods, such as the methods disclosed in EP 0182469 or WO 98 55826, the method according to the present invention requires only three images. Additional images, when available, may allow for discarding noisy pixels or images and selecting only three images having the most advantageous intensity values, i.e. intensity values that are less noisy (since noise can be caused, for example, by an image saturation, or by an image being black). For example, in the case when four images are available, the step h) of the present method as recited in claim 1, provides that the three "best" images among these four are selected by discarding the one that is the "most noisy".

Since both EP 0182469 and WO 98 55826 teach away from the method recited in claim 1, it is respectfully submitted that the subject matter of Claims 9-12 and 14 dependent on claim 1 as submitted patentably distinguish over the cited art or any combination thereof.

In view of the above and foregoing, it is respectfully requested that the rejection of claims 9-12 and 14 under 35 U.S.C. § 103 be withdrawn.

Claims 16 and 17 have been rejected as being unpatentable over EP 0182469 under 35 U.S.C. § 103.

Applicants respectfully traverse the rejection as follows.

Claim 16 has been amended to recite the invention more precisely.

Since, as discussed in relation to claim 1, EP 0182469 does not disclose or suggest a system for measuring the relief of an object requiring only three images, as recited in claim 16, it is respectfully submitted that claim 16 as submitted, as well as claim 17 dependent thereon, are patentable over EP 0182469.

In view of the above and foregoing, it is respectfully requested that the rejection of claims 16 and 17 under 35 U.S.C. § 103 be withdrawn.

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The rejections of the original claims are believed to have been overcome by the present remarks and amendments. From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such an action is earnestly solicited.

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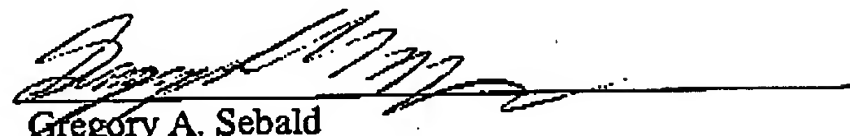
If the Examiner feels that a telephone interview may be helpful in this matter, please
contact Applicants' representative at 612.336.4728.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, MN 55402-0903
612/332-5300

Date:

9/15/05


Gregory A. Sebald
Reg. No. 33,280
GAS/km

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